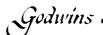
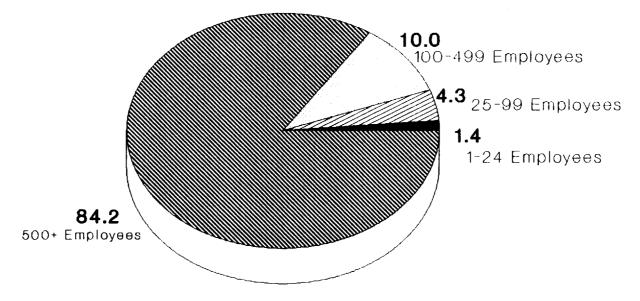


% Total EE's Covered by Company Size

(Source = United States General Accounting Office)



## United States Telephone Association Post-Retirement Health Care Study Summary of Data on National Prevalence of Post-Retirement Medical Benefit Plans



% of Covered Employees by Company Size

(Source = United States General Accounting Office)



#### APPENDIX B - METHODS AND ASSUMPTIONS

Below is a description of the key methods and assumptions used for the derivation of the Demographic Adjustment as well as the basic BLI calculations. The methods and assumptions utilized in developing the other Adjustments are sufficiently documented in Section III.

#### Demographic Adjustment

The three adjustments making up the Demographic Adjustment were developed by calculating and comparing SFAS 106 costs for sample populations incorporating the GNP and TELCO demographic characteristics based on the age and service distribution of GNP and TELCO employees respectively. The calculations utilized pre- and post-65 per capita claim amounts that bear the same relationships to each other as do the pre- and post-65 BLIs for GNP and TELCO. All assumptions other than withdrawal, and retirement age (already discussed) were as follows:

discount rate = 8.13%

trend rate = 10.08% in 1991 decreasing gradually to 5.56% for the year 2006 and later

retirement eligibility = 55

amortization period for transition obligation = 20 years

percent married = 65%

#### BLI Calculations

The calculation of individual plan Benefit Level Indicators used the following data and methods.

A data base of annual claim amount distributions was used, based on the experience of 39,436 retirees who participate in employer sponsored post-retirement medical programs administered by a large national insurance company. For pre- and post-65 claimants, frequency weights, monetary weights, hospital/



drug/other ratios and Medicare reimbursements by type were developed. This data base has 35 claim ranges with average claim amounts in each range from \$15 to \$48,753.

The calculations also used our data base of the post-retirement medical plan provisions for 830 private sector employers. For both comprehensive and base plus plans the following data items were available;

- ° hospital room and board, either as days covered or a percentage
- ° surgical coverage
- ° in-patient physician coverage
- out-patient physician coverage
- ° diagnostic coverage
- ° prescription drug coverage, either percentage or flat dollar co-pay
- ° major medical deductibles
- ° major medical co-pay percentage
- out-of-pocket maximums
- annual/lifetime maximums
- Medicare integration method (i.e., carve-out, supplement or coordination of benefits)
- ° participant and dependent contribution rates

These provisions are available separately for pre- and post-65 claimants.

A particular plan's gross BLI was computed by determining how much the plan would reimburse at each claim amount in the distribution data base. The reimbursement amount was determined separately for each type of charge; e.g., hospital, drug, etc. Medicare reimbursement was taken into account explicitly for each type of charge based on the form of Medicare integration in the plan. Each reimbursement was then divided by the corresponding claim to obtain a reimbursement ratio. These ratios were then weighted by the claim amount weights in the distribution to determine the gross BLI.

Per retiree contribution rates were then compared to per retiree claim amounts, and that ratio was used as an offset to the gross BLI to determine the final net pre- and post-65 BLIs for each company in the data base.

After average pre- and post-65 BLIs had been determined for GNP and TELCO (see Section III page 11 for methodology), pre- and post-65 weightings were calculated as the percentages of total SFAS 106 cost associated with pre- and post-65 claims, determined using the same methodology as for the Demographic Adjustment. These were then applied to the pre- and post-65 BLIs to develop GNP BLI and TELCO BLI.

By way of illustration, suppose a comprehensive plan pays 80% after a \$200 deductible, subject to an out-of-pocket maximum of \$1,500. After 65, Medicare integration is 'Supplement'. Participants contribute \$10 per month.

In the \$4,000 - \$5,000 claim range, for example, we find the average claim to be \$4,479. Since this is a comprehensive plan, we derive the pre-65 reimbursement utilizing the total claim amount, that is (4,479 - 200) times 80%, or \$3,423. The out-of-pocket maximum has not been met. Therefore, the pre-65 reimbursement ratio in the charge range is 0.7642. The ratios for all ranges are averaged using weights given by the distribution table to determine the gross pre-65 BLI.

The post-65 reimbursement recognizes Medicare integration, in this example the method is Medicare Supplement. We determine the breakdown of charges to be \$1,776 for hospital, \$567 for prescription drugs, and \$2,136 for all other charges. Total Medicare reimbursement is \$2,047 (calculated explicitly from

Medicare provisions) and is immediately taken out; in this case \$1,177 from hospital, \$870 from other medical charges and nothing from drug charges. The plan provisions are then applied to the balance of \$2,432, giving a plan reimbursement of \$1,786 ((2,432 - 200) times 80%). This produces a post-65 reimbursement ratio of 0.3987 for this claim range. As with the pre-65 case the ratios for all ranges are then averaged using weights given by the distribution table to determine the gross post-65 BLI.

The gross BLIs are then adjusted to reflect participant contributions. Our example here might produce gross BLIs of 0.85 pre-65 and 0.32 post-65. The participant contribution of \$10 per month translates into a reduction in the gross BLIs of 0.03 pre-65 and 0.04 post-65, giving final BLIs of 0.82 and 0.28 respectively.

#### Appendix C

#### Part I: Derivation of the Model

#### I. Households

All households are assumed to be identical and obtain utility from money and leisure as well as each of the m produced goods. Each household solves the following maximization problem

(A1) U\* = 
$$\max_{\{C_1, M, N\}} \{C^{\gamma}(M/P)^{1-\gamma} - (\phi N^{\eta+1})^{1/\eta}\}$$

subject to the constraint that

(A2) 
$$M + \Sigma_i P_i C_i = I$$

where

(A3) 
$$C = (\Sigma_i \alpha_i C_i^{(\theta-1)/\theta})^{\theta/(\theta-1)}$$

(A4) 
$$P = (\Sigma_i \alpha_i^{\theta} P_i^{1-\theta})^{1/(1-\theta)}$$

and  $C_i$  is the consumption of produced good i,  $P_i$  is the nominal price of produced good i, M is the amount of money held at the end of the period, N is the amount of labor supplied, I is the total nominal value of resources available to the household, C is the bundle of consumption goods defined by the aggregator function in (A3), and P is a price index defined in (A4). (Note that the price index P in (A4) is not the fixed-weight GNP price index. The solution of the model produces prices for each of the m goods which can then be combined to calculate the appropriate fixed-weight GNP price index.) The parameters of the utility function are  $\gamma$ , which equals the share of the household's nominal expenditure on produced goods rather than on money balances;  $\theta$ , which is the elasticity of substitution between the consumption of any pair of goods;  $\alpha_i$ ,  $i=1,\ldots,m$ , which indicate the weight of each good in the household's utility function;  $\eta$ , which is the elasticity of labor supply; and  $\phi$  which characterizes the degree of disutility of labor.

The utility function in equation (A1) is additively separable between  $(C_i,M)$  and N. This separability allows us to solve the household's maximization problem in two stages. First, we will maximize utility with respect to  $C_i$  and M, and then we will choose the utility-maximizing level of labor supply N. Choosing  $C_i$  and M to maximize the utility function in (A1) subject to the constraint in (A2) yields the following first-order conditions:

(A5) 
$$\alpha_i C_i^{-1/\theta} \gamma C^{\gamma-1+1/\theta} (M/P)^{1-\gamma} = \mu P_i$$

(A6) 
$$(1-\gamma)C^{\gamma}(M/P)^{-\gamma}/P = \mu$$

where  $\mu$  is the Lagrange multiplier on the constraint (A2).

- Godwins

Combining the first-order conditions (A5) and (A6) yields

(A7) 
$$\alpha_i C_i^{-1/\theta} \gamma C^{(1-\theta)/\theta} M = (1-\gamma) P_i$$

Multiplying both sides of (A7) by  $C_i$  and then summing over all i yields

(A8) 
$$\Sigma_i P_i C_i = (\gamma/(1-\gamma)) M$$

Substituting (A8) into (A2) yields

(A9) 
$$M = (1-\gamma)I$$

Substituting (A9) into (A7), summing over all i, and using the definition of the price index in (A4) yields

(A10) PC = 
$$\gamma I$$

Substituting (A9) into (A7) and then using (A10) yields the demand for good i

(A11) 
$$C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} \gamma I/P$$

Substituting (A9) into (All) yields

(A12) 
$$C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma))M/P$$

Having solved for the optimal values of  $C_{\hat{i}}$  and M, we now solve for the optimal value of labor supply N. First, substitute the optimal values of  $C_{\hat{i}}$  (eq. All) and M (eq. A9) into the utility function in (Al) to obtain

(A13) 
$$U^* = \max_{N} \{ \gamma^{\gamma} (1-\gamma)^{1-\gamma} (I/P) - (\phi N^{\eta+1})^{1/\eta} \}$$

subject to I = wN + rK\* + M +  $\pi$ , where  $\pi$  is the (present value of) post-retirement health benefits to be received by the household.

The first-order condition for labor supply N is

(A14) 
$$\gamma^{\gamma} (1-\gamma)^{1-\gamma} (w/P) = ((\eta+1)/\eta) (\phi N)^{1/\eta}$$

which can be solved to obtain N\*, the optimal amount of labor supplied

(A15) N\* = 
$$\nu (w/P)^{\eta}$$

where 
$$\nu = [\gamma^{\gamma}(1-\gamma)^{1-\gamma}\eta/(\eta+1)]^{\eta}\phi^{-1}$$

#### II. Firms

Each of the m goods is produced by competitive firms with Cobb-Douglas production functions. The total production of good i,  $Y_i$ , is given by the production function

(A16) 
$$Y_i = A_i N_i^{\rho i} K_i^{1-\rho i}$$
  $i = 1, ..., m$ 

The firms are assumed to be competitive and thus take the nominal price of their output,  $P_{\bf i}$ , the nominal rental price of capital, r, and the nominal price of labor,  $D_{\bf i}w$ , as fixed. Note that the nominal price of labor consists of two parts: w reflects the nominal wage rate excluding the cost of post-retirement health benefits covered by FAS 106. The factor  $D_{\bf i}$  reflects the impact on the cost per unit of labor of post-retirement health benefits covered by FAS 106. For firms that do not offer post-retirement health benefits,  $D_{\bf i}$  = 1. For firms that offer such benefits,  $D_{\bf i}$  > 1. Competitive firms choose  $N_{\bf i}$  and  $K_{\bf i}$  to maximize

(A17) 
$$P_i A_i N_i^{\rho_i} K_i^{1-\rho_i} - wD_i N_i - rK_i$$
  $i = 1, ..., m$ 

The first-order conditions for labor and capital are

(A18) 
$$\rho_i P_i Y_i / N_i = wD_i$$
  $i = 1, ..., m$ 

(A19) 
$$(1-\rho_i)P_iY_i/K_i = r$$
  $i = 1,...,m$ 

Given the nominal wage w and the FAS 106 factor  $D_i$ , (A18) determines the amount of labor demanded in sector i; given the rental price of capital, (A19) determines the amount of capital demanded in sector i.

#### III. Market Equilibrium

Equilibrium in the factor markets requires that the aggregate amount of labor demanded equal the supply of labor and the aggregate amount of capital demanded equal the supply of capital:

(A20) 
$$\Sigma_i N_i = N^*$$

(A21) 
$$\Sigma_i K_i = K^*$$

The amount of money demanded equals the amount initially held by consumers

$$(A22) \quad M = M^*$$

The amount of good i produced must equal the amount of good i demanded, so that using (Al2) we obtain

(A23) 
$$Y_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma))M/P$$

The nominal value of production must equal the nominal value of total factor payments, including the (present value of the) cost of post-retirement health benefits,

(A24) 
$$\Sigma_i P_i Y_i = rK^* + w\Sigma_i D_i N_i$$

The nominal value of total resources available to the household, I, equals the initial holding of money M\* plus capital income rK\*, wage income, w $\Sigma_i N_i$ , and the present value of post retirement health benefits  $\pi$  = w $\Sigma_i (D_i - 1) N_i$  so that

(A25) I = 
$$M* + rK* + w\Sigma_1D_1N_1$$

The solution to the model consists of the equilibrium conditions (A20) - (A25), the production functions (A16), the labor demand equations (A18), the capital demand equations (A19), and the definition of the price index (A4).

#### Part II: Calibration of the model

The model is calibrated so that in the absence of FAS 106 it yields an allocation of labor across sectors that matches the actual allocation of labor across sectors. It is also calibrated such that in the absence of FAS 106, all nominal prices are equal to one.

Inputs to the calibration procedure:

 $\eta$ , the elasticity of labor supply

heta, the elasticity of substitution between the consumption of any two goods

 $\gamma$ , the share of nominal expenditure devoted to produced goods

 $N_0^*$ , the initial total amount of labor to be allocated across sectors

K\*, the fixed total amount of capital to be allocated across sectors

 $\rho_i$ , the share of labor in total cost in sector i

 $\mathbf{D_{i}}\text{,}$  the FAS 106 cost factor in sector i (equal to 1 in the absence of FAS 106)

 $s^{N}_{i} = N_{i}/N^{*}$ , the fraction of labor employed in sector i

In the initial calibration, all nominal prices are set equal to one

(B1) 
$$P_i = 1, i = 1, ..., m$$

(B2) 
$$P - 1$$

The amount of labor initially used in each sector follows directly from the fraction of the labor force employed in sector i,  $s_{i}^{N}$ , and the total amount of labor employed,  $N_{o}^{*}$ 

(B3) 
$$N_i - s_i^N N_o^*$$
  $i - 1, ..., m$ 

Define  $s_i^Y = P_i Y_i / \Sigma_i P_i Y_i$  to be the share of sector i's output  $P_i Y_i$  in total output  $\Sigma_i P_i Y_i$ . Then using the labor demand equation (A18) and the fact that the total amount of labor employed is  $N_o^*$ , it can be shown that

(B4) 
$$s_{i}^{Y} - (D_{i}s_{i}^{N}/\rho_{i})/\Sigma_{i}(D_{i}s_{i}^{N}/\rho_{i})$$
  $i = 1,...,m$ 

Using the capital demand equation (Al9) and the fact that the total amount of capital used is  $K^*$ , it can be shown that

(B5) 
$$K_i = [(1-\rho_i)s^Y_i/\Sigma_i(1-\rho_i)s^Y_i]K^*$$
  $i = 1,...,m$ 

Normalize  $A_1 = 1$  so that the production function in the first sector is



(B6) 
$$Y_1 = N_1^{\rho_1} K_1^{1-\rho_1}$$

Using  $Y_1$  from (B6), the nominal wage and the nominal rental price of capital can be determined from the first-order conditions (A18) and (A19) for sector 1 to obtain

(B7) 
$$w = \rho_1 Y_1 P_1 / (D_1 N_1)$$

(B8) 
$$r = (1-\rho_1)Y_1P_1/K_1$$

Now calculate  $\nu$  in the labor supply curve (eq. A15) as

(B9) 
$$\nu = N_0^* (P/w)^{\eta}$$

To calibrate  $A_i$ ,  $i=2,\ldots,m$ , substitute the production function (A16) into the first-order condition for labor (A18) and set  $P_i=1$  (eq. B1) to obtain

(B10) 
$$A_i = (D_i w/\rho_i) (N_i/K_i)^{1-\rho_i}$$
  $i = 2, ..., m$ 

Now set all prices equal to 1 in the equilibrium condition (A23), and use (A22) to obtain

(B11) 
$$Y_i = \alpha_i^{\theta} (\gamma/(1-\gamma)) M^*$$

Summing (B11) over all i we obtain

(B12) 
$$\Sigma_{i}Y_{i} = (\gamma/(1-\gamma))M^{*} \Sigma_{i}\alpha_{i}^{\theta}$$

Now observe that with  $P = P_i = 1$  for all i, equation (A4) implies that

(B13) 
$$\Sigma_i \alpha_i^{\theta} = 1$$

Substituting (B13) into (B12) and rearranging yields

(B14) 
$$M* = ((1-\gamma)/\gamma) \Sigma_i Y_i$$

Finally, substituting (B14) into (B11) and recalling that when  $P_i = P = 1$ ,  $s_i^Y = Y_i/\Sigma Y_i$ , we obtain

(B15) 
$$\alpha_i^{\theta} - s_i^{\Upsilon}$$
  $i - 1, \dots, m$ .



#### POST RETIREMENT BENEFIT EXPENSES

## BUDGET ASSUMPTION

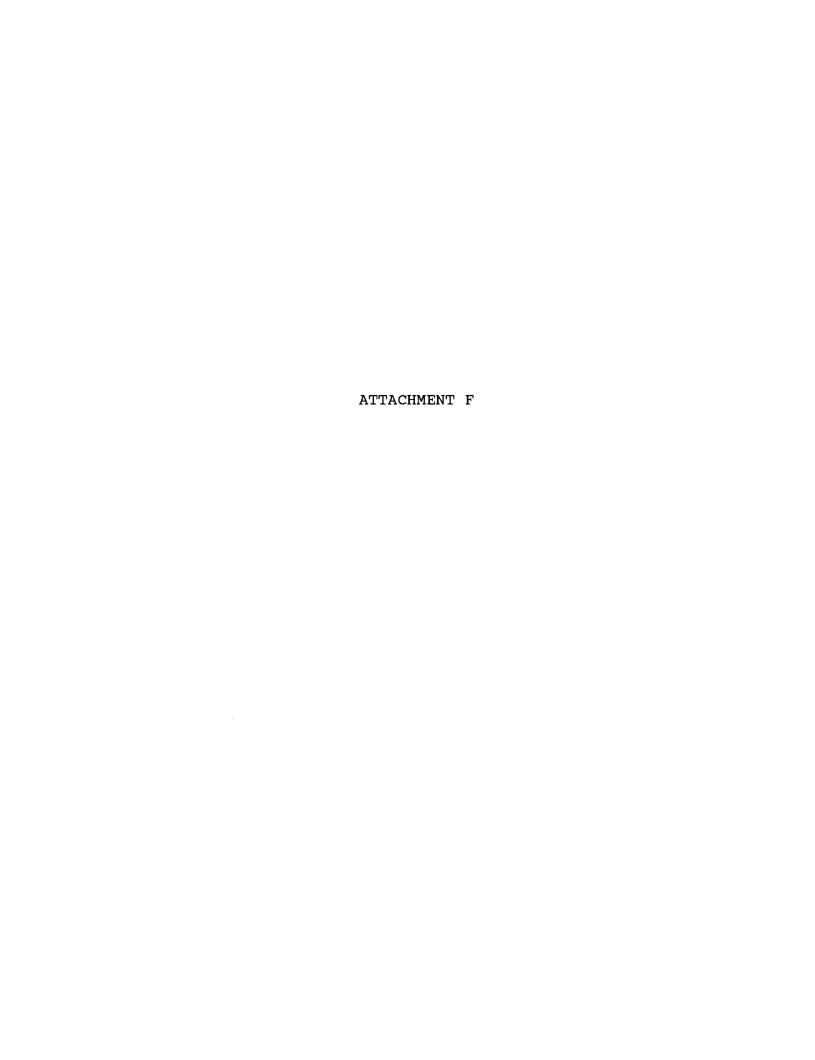
## INCLUDED IN 1990/1991 TARIFF PERIOD\*

(\$'000)

MTN		NWB		<u>PNB</u>			
Arizona Colorado Idaho-Mtn Montana New Mexic Utah Wyoming	1,644	Iowa Minnesota Nebraska North Dakota South Dakota	\$3,888 7,692 2,364 1,140 1,128	Idaho-PNB Oregon Washington	\$ 72 5,004 8,640		
Total	\$29,376		\$16,212		\$13,716		

Grand Total \$59,304

\*This data was included in U S WEST's 1990 Annual Access Charge Filing, Description and Justification, Volume 2-1, Page 3-5.



## U S WEST Communications

Retiree Medical and Dental Plans

1991 Actuarial Study of Expense

Under the SFAS's Statement No. 106

Employers' Accounting For Postretirement Benefits Other Than Pensions

U S WEST COMMUNICATIONS 1991 Actuarial Study of Expense Under the SFAS No. 106

#### Purpose of Actuarial Study

The Financial Accounting Standards Board (FASB) released its new accounting rules for retiree health plans in December 1990. The purpose of this actuarial study is to illustrate the impact the change in accounting procedure for retiree medical and dental plans will have on U S WEST Communications.

In addition, this study provides an overview of the new accounting rules.

#### New Accounting Rules

U S WEST Communications generally accounts for its retiree medical and dental plans on a pay-as-you-go basis. The FASB's new accounting rules for these plans will require accrual accounting beginning in 1993.

The accrual net periodic postretirement/benefit cost will be made up of the following components:

- Service Cost. The cost of benefits that are earned by active employees not yet eligible for retiree medical and dental benefits during the year, plus interest on the service cost. The service cost is based on the projected unit credit cost method.
- Interest Cost. Interest on the Accumulated Postretirement Benefit Obligation (APBO). The APBO represents the value of benefits earned as of the valuation date by active employees and retirees.
- Actual Return of Plan Assets. For funded plans, the actual investment return on the fair value of the plan assets.
- Amortisation of the Transition Obligation. The Transition Obligation is the unfunded liabilities of the plan (that is, the APBO minus any plan assets) as of the measurement date. This unfunded liability is amortized on a level basis over the expected future working lifetimes of current active employees, or 20 years, if longer.
- Met Amortisation of Gains and Losses. Actuarial gains and losses resulting from variations in experience from assumptions, or cost changes from plan design changes, are amortized using any consistent method.

U S WEST COMMUNICATIONS 1991 Actuarial Study of Expense Under the SFAS No. 106

#### Net Periodic Postretirement Benefit Cost

The components of the Net Periodic Postretirement Benefit Cost for 1991, calculated under the FASB exposure draft, developed in Table 91-1, are shown below:

(1)	Service Cost	\$ 55,000,000
(2)	Interest Cost	197,000,000
(3)	Return on Plan Assets	0
(4)	Amortization of Transition Obligation	114,000,000
(5)	Net Periodic Postretirement Benefit Cost	\$ 366,000,000

#### Plan Provisions

A summary of the plan provisions recognized as of January 1, 1991, is provided in Table 91-2.

#### Actuarial Assumption

The actuarial assumptions used to determine the Net Periodic Postretirement Benefit Cost are outlined in Table 91-3. These assumptions include the discount rate, employee separation rates, retirement rates, mortality rates, health care inflation rates, and current health care costs by age.

## U S WEST COMMUNICATIONS

## 1991 ACTUARIAL STUDY OF EXPENSE

## UNDER THE FASB EXPOSURE DRAFT

## INDEX OF TABLES

TABLE	DESCRIPTION
91-1A	Development of 1991 Net
	Postretirement Contribution
91-1B	Development of Projected 1993
	Net Postretirement Contribution
91-2	Summary of Plan Provisions
	as of January 1, 1991
91-4	Summary of Actuarial
	Methods and Assumptions
Exhibits	Actuarial Assumptions

## DEVELOPMENT OF 1991 NET PERIODIC POSTRETIREMENT COST

(1)	Service Cost	
	(a) Net Service Cost (b) Interest 0 8.5%	\$ 51,000,000 4,000,000
	(c) Total Service Cost	\$ 55,000,000
(2)	Interest Cost	
	(a) APBO	\$ 2,370,000,000
	(b) Interest @ 8.5%	197,000,000
(3)	Return on Plan Assets	\$ 0
(4)	Amortization of Transition Obligation	
	(a) APBO	\$ 2,370,000,000
	(b) Amortized over 20 Years	114,000,000
(5)	Net Periodic Postretirement Cost	
	1(c)+2(b)-3+4(b)	\$ 366,000,000
(6)	Estimated Pay-As-You-Go Expenses	\$ 107,000,000

## DEVELOPMENT OF PROJECTED 1993 NET PERIODIC POSTRETIREMENT COST

(1)	Service Cost		
	(a) Net Service Cost (b) Interest 0 8.50 (c) Total Service Cost	\$ \$	57,000,000 4,000,000 61,000,000
(2)	Interest Cost	•	02,000,000
	(a) APBO (b) Interest @ 8.5%	\$	2,786,000,000 232,000,000
(3)	Return on Plan Assets	\$	0
(4)	Amortization of Transition Obligation		
	(a) APBO (b) Amortized over 20 Years	\$	2,786,000,000 139,000,000
(5)	Net Periodic Postretirement Cost 1(c)+2(b)-3+4(b)	\$	432,000,000
(6)	Estimated Pay-As-You-Go Expenses	\$	122,000,000

#### U S WEST COMMUNICATIONS

# 1991 ACTUARIAL STUDY OF EXPENSE UNDER THE FASB EXPOSURE DRAFT SUMMARY OF PLAN PROVISIONS AS OF JANUARY 1, 1991

1.	Eligibility Requirements For	Employees who retire from active
	Benefits	status, or following receipt of LTD
		benefit, with a service pension
		under the U S WEST Management

Pension Plan, or U S WEST Pension Plan.

2. Benefits Sam

Same as provided under active medical and dental plans of retiree.

Medicare payments coordinated on a benefits-less-benefits or carve-out

approach.

All Medicare-eligible retirees receive Part B premium

reimbursement.

3. <u>Dependent Coverage</u>

Spouses and eligible dependents of retirees are covered until the earlier of their death, or six

earlier of their death, or six months after the retiree's death.

4. Retires Cost None for those retiring before January 1, 1991.

Based on industry-

wide experience

(See Exhibit 5)

1975-78

#### U S WEST COMMUNICATIONS

#### 1991 ACTUARIAL STUDY OF EXPENSE UNDER THE FASE EXPOSURE DRAFT

#### SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

#### Projected Unit Credit Actuarial Cost Method (Service Allocation)

Projected benefits payable in the event of death, termination, disability, or retirement based on the applicable actuarial assumptions shown below were determined for all active participants. The projected benefits are allocated to each of the participant's years of service through the assumed occurrence of the applicable event in proportion to the rate that benefits accrue under the plan. The service cost is equal to the actuarial present value of the benefits allocated to the current year, and the projected benefit obligation is equal to the actuarial present value of the benefits allocated to years prior to the current year.

The projected benefit obligation for retired participants and their beneficiaries currently receiving benefits and active participants eligible to retire was determined as the actuarial present value of the benefits expected to be paid. No service costs are now payable with respect to these participants.

The actuarial assumptions are based on the exhibits shown in the last section of this report and are summarized below:

1.	Interest Rate	8.5%
2.	Separation	Based on industry- wide experience 1975-78 (See Exhibit 1)
3.	Retirement	Based on industry- wide experience 1975-78 (See Exhibit 2)
4.	Mortality - Active Employees	Based on industry- wide experience 1975-78 (See Exhibit 3)
5.	Mortality - Service Pensioners	Based on industry- wide experience 1975-78 (See Exhibit 4)

6.

Percentage Of Qualified

Beneficiaries

7.	Claims	Developed from U S WEST claims analysis study (See Exhibit 6)			
8.	Medical Cost Inflation Rate	1991-1995 - 9% 1996-2000 - 8% 2001-2005 - 7% 2006+ - 6.5%			
9.	Medicare Inflation Rate	1991-1995 - 9% 1996-2000 - 8% 2001-2005 - 7% 2006+ - 6.5%			
10.	Retiree Contributions (Applicable to employees retiring after 12/31/90)	20% of future medical cost increases			

Exhibit 1

## ANNUAL RATES OF SEPARATION BEFORE RETIREMENT - MALE EMPLOYEES

Service in Years t	Rates of separation during year t + \( \frac{1}{2} \) to t + 1\( \frac{1}{2} \) for employees entering service at specimen ages							
	15	20	25	30	35	40	45	50
0	.105	.105	.105	.102	.096	.091	.088	.089
1	.074	.072	.070	.066	.062	.059	.058	.059
2	.046	.045	.044	.042	.040	.037	.035	.036
3	.020	.026	.032	.032	.025	.025	.031	.031
4	.018	.019	.027	.025	.018	.020	.022	.026
5	.014	.016	.024	.021	.016	.016	.019	.022
6	.012	.014	.021	.018	.016	.015	.016	.020
7	.011	.013	.018	.016	.016	.013	.014	.024
•	.009	.011	.016	.015	.016	.013	.013	.028
•	.009	.010	.013	.014	.013	.011	.014	.032
10	.008	.008	.012	.013	.012	.010	.017	.036
11	.008	.008	.010	.011	.010	.009	.020	.040
12	.008	.008	.009	.009	.009	.010	.024	.046
13	.007	.007	.008	.008	.009	.012	.028	.052
14	.007	.007	,008	.007	.009	.014	.032	<b>\</b>
15	.006	.006	.006	.006	.009	.017	.036	1
16	.005	.005	.006	.006	.009	.020	.040	j
17	.005	.005	.005	.006	.010	.024	.046	
18	.004	.004	.005	.006	.012	.028	. 052	
19	.004	.004	.005	.007	}	1		
20	.004	.004	.005	.008		1	}	
21	.004	.004	.006	.009	1	ł		
22	.004	.004	.006	.010	1	1	1	1
23	.004	.004	.006	.012		1		
24	.004	.004	1		1	1	1	
25	.004	.005	1	1	1	1	1	1
26	.004	.005	1		ĺ		1	1
27	.005	.006				1		
28	.005	.006	1		l	1	1	I

Management